



Marine Bird Science Activities

US Fish and Wildlife Service

Success through Partnerships

- **Atlantic Marine Bird Cooperative** (www.acjv.org/marinebirds.htm)
- **Marine Bird Surveys**
 - Ships of Opportunity Cruises
 - AMAPPS Aerial Surveys
 - Sea Duck Survey
 - Individual Tracking Studies
- **Providing Guidance to States and Partners (Technical Assistance)**
 - DOE Steering Committee and review panel/baseline data proposals
 - Long-tailed Duck distribution and abundance maps to BOEM
 - Seabird distribution and relative density maps to North Carolina
- **Implementing Priority Science Needs**
 - Workshop on Marine Bird Science and Offshore Wind
 - Best Darn Bird Map - Product will be a tool that can be used to help site offshore wind developments.
 - Marine Bird Surveys
 - Marine Bird Database

Atlantic Marine Bird Cooperative

- Partnership of marine bird scientists facilitated by FWS
- Annual meetings
- Consensus on priority science needs
- Collaboration = Successful proposal submissions and effectiveness in marine bird conservation efforts
- www.acjv.org/marinebirds.htm

BOEM – Funded Marine Bird Survey Projects

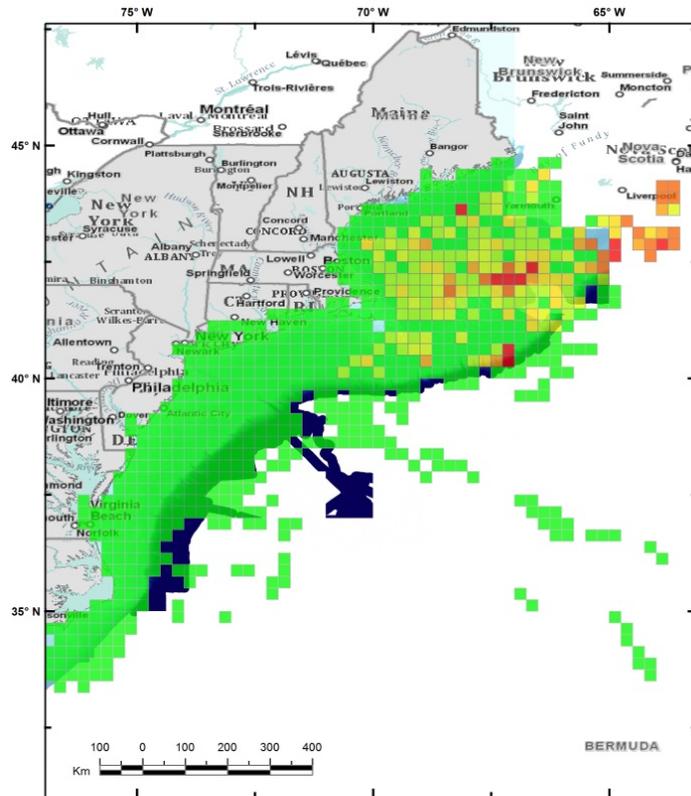
- Ships of Opportunity Surveys (BOEM)
 - ✓ Broad scale offshore surveys
 - ✓ 5 year project (\$808K)
 - ✓ CUNY
- FWS Sea Duck Survey Support (\$20k/year)
- Individual Tracking Studies (\$3.5 million/3 years)
- Atlantic Marine Assessment Program for Protected Species (AMAPPS)
 - 5 year project
 - Aerial Surveys
 - Seabird Observers on NOAA vessels
 - Data Modelers
 - Satellite Tags
- \$1,080,000 Total
 - \$150K (2010); \$220K (2011); \$420K (2012); \$290K (2013)

Ships of Opportunity Surveys

Northern Fulmar, Changes in Abundance

● 1970-1990

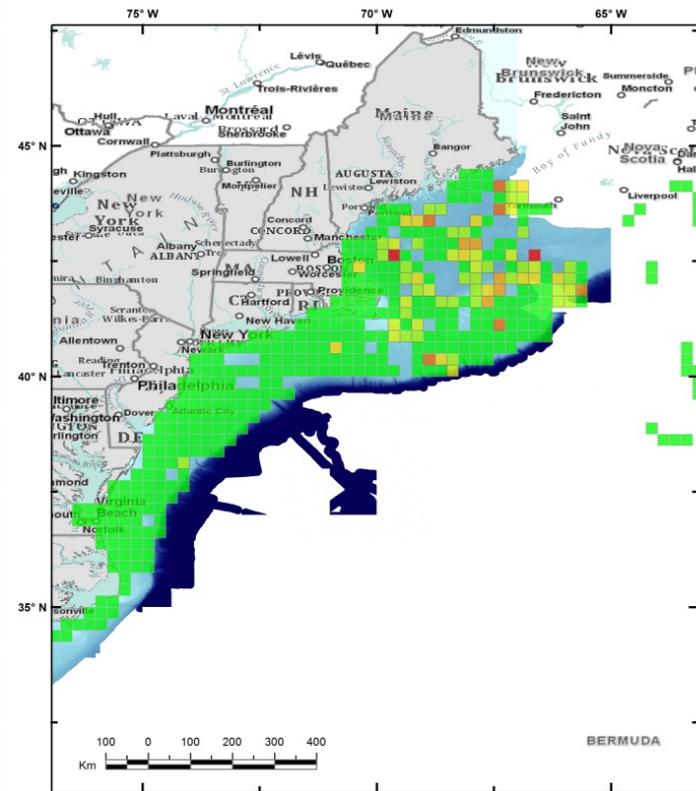
● 1990-2010



Effort-adjusted counts of Northern Fulmar during 1970 to 1990 (Nov-Jun)



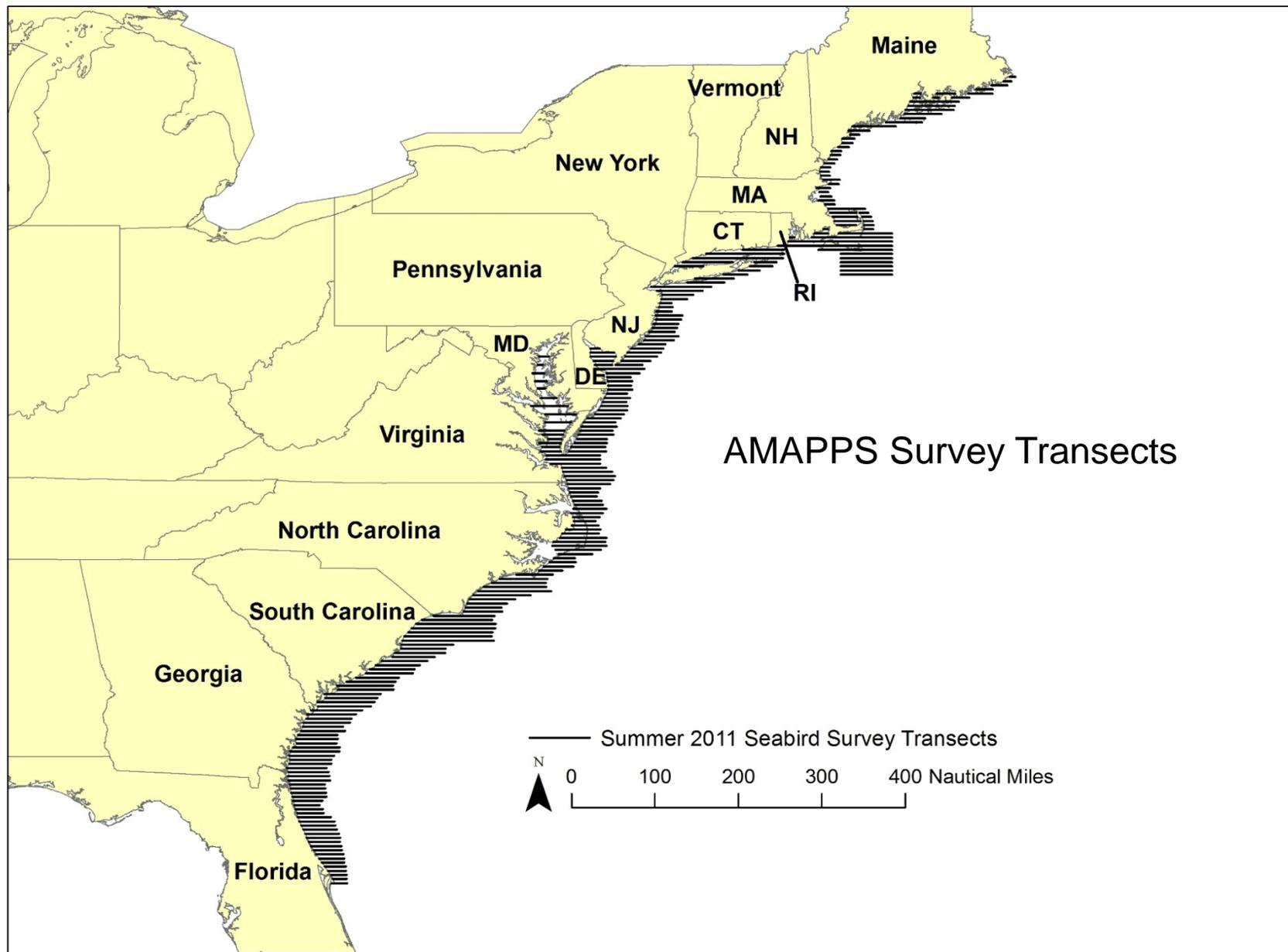
A. Gilbert, BRI
Map produced: 11/8/2011



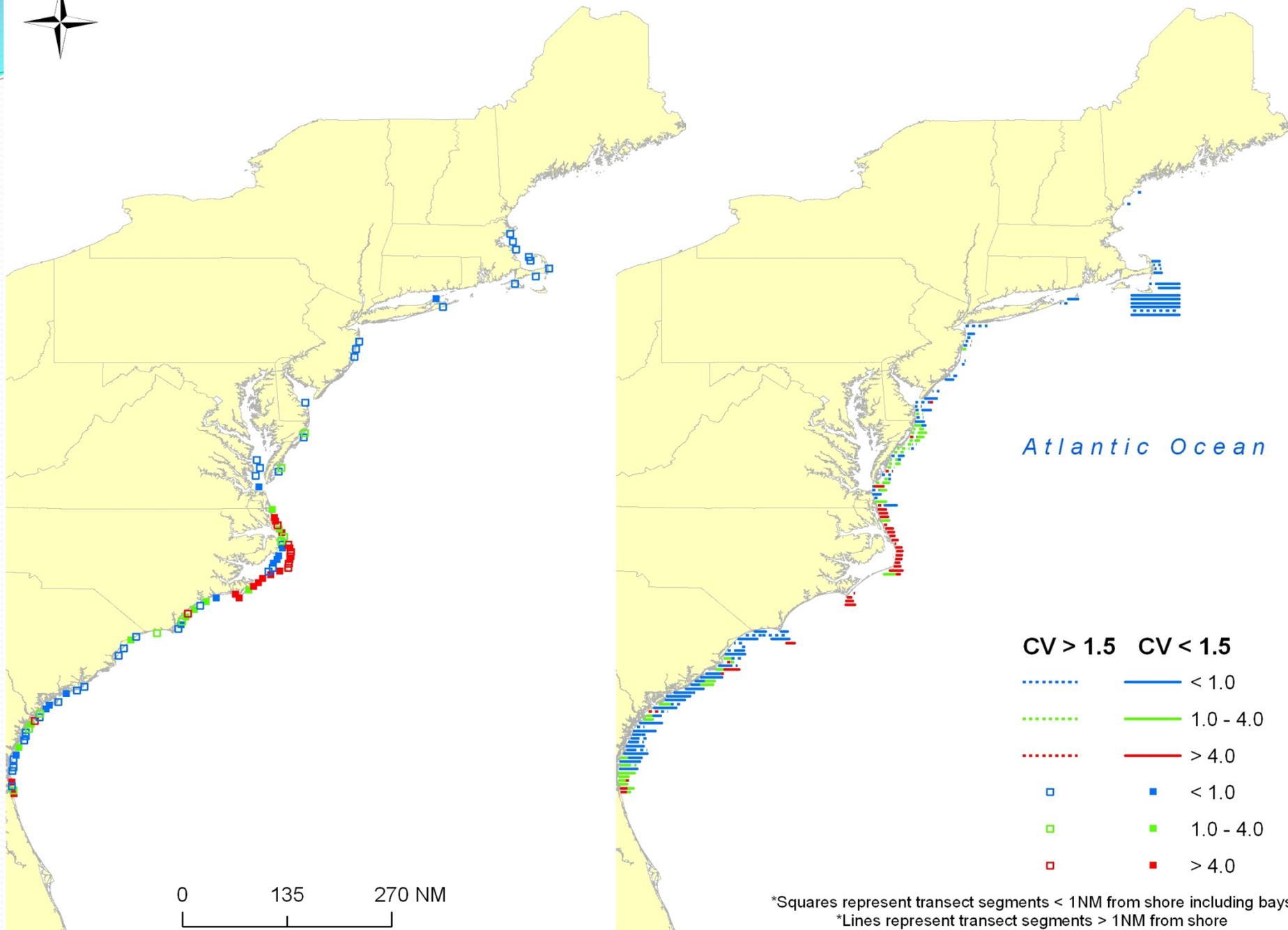
Effort-adjusted counts of Northern Fulmar during 2000 to 2010 (Nov-Jun)



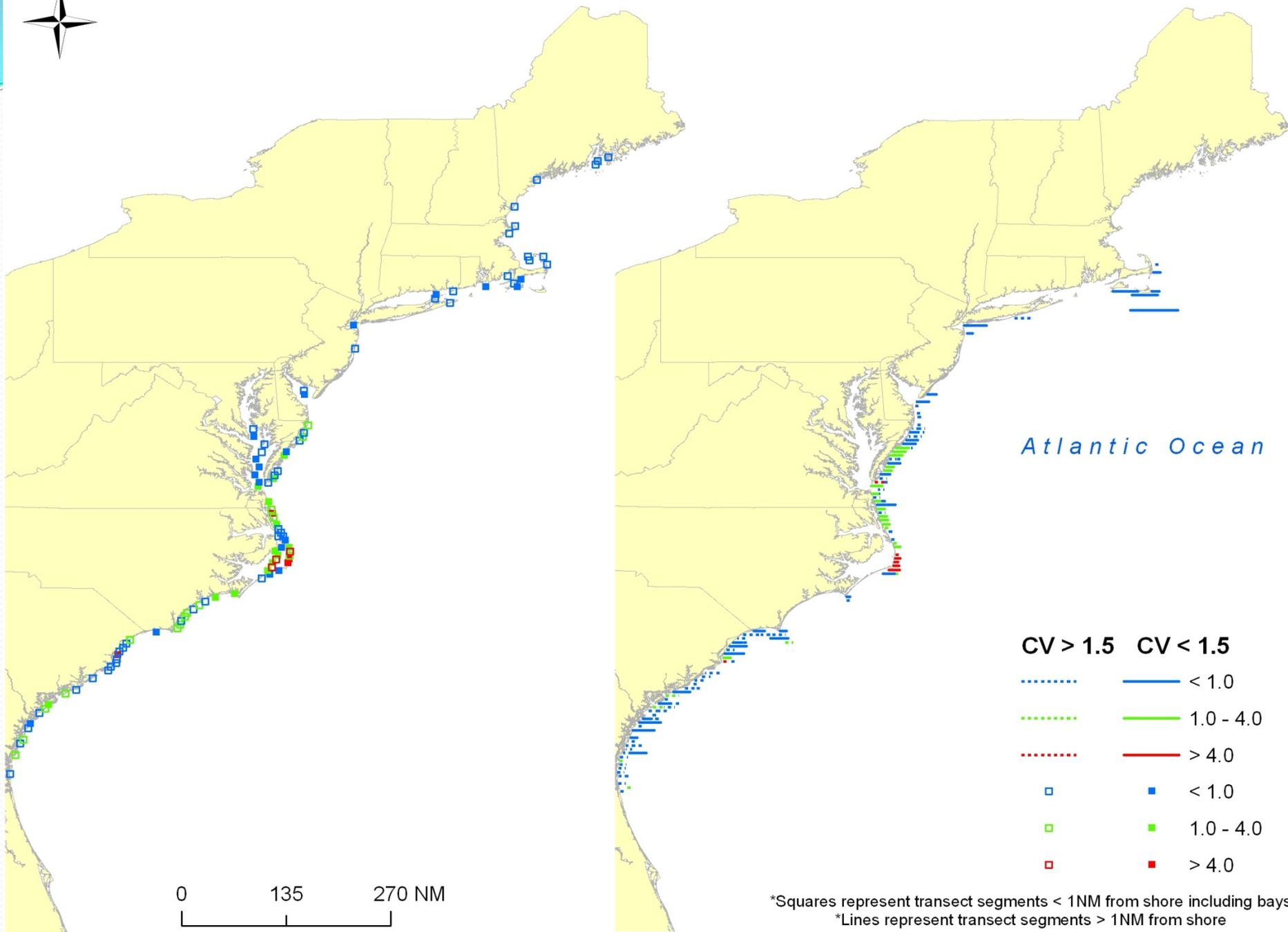
A. Gilbert, BRI
Map produced: 11/8/2011



Northern Gannet Densities by Distance to Coast



Red-throated Loon Densities by Distance to Coast



Atlantic Ocean

CV > 1.5		CV < 1.5	
.....	————	< 1.0
.....	————	1.0 - 4.0
.....	————	> 4.0
□	□	■	< 1.0
□	□	■	1.0 - 4.0
□	□	■	> 4.0

0 135 270 NM

*Squares represent transect segments < 1NM from shore including bays
*Lines represent transect segments > 1NM from shore

Individual Tracking Studies

- Audubon Shearwater
- Arctic Tern
- Great Shearwater
- Surf Scoter
- Red-throated Loon
- Northern Gannet

Data SIO, NOAA, U.S. Navy, NGA, GEBCO

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Image © 2011 TerraMetrics

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27°04'44.75" N 54°02'20.57" W elev -18007 ft

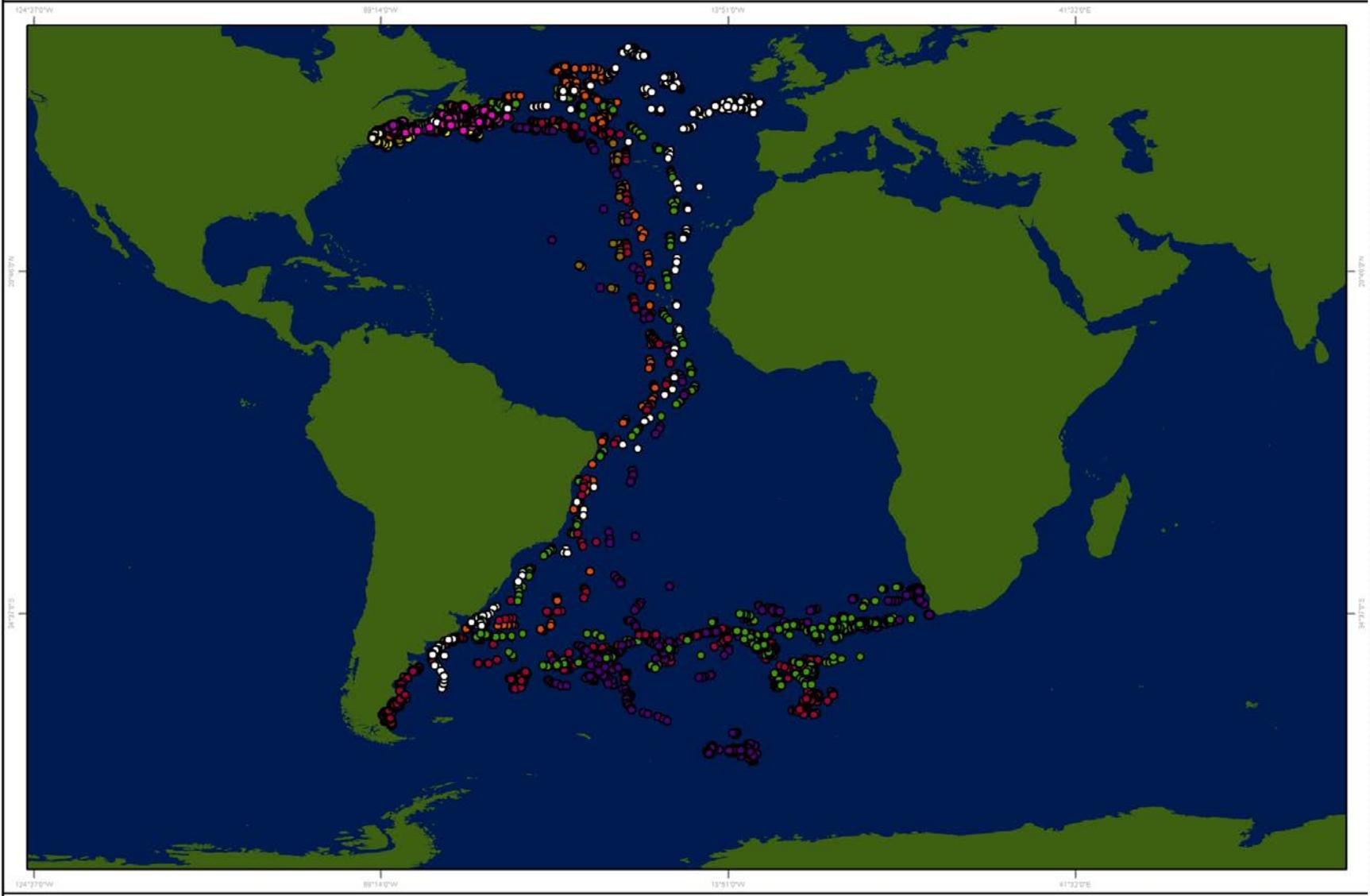
Great Shearwater Fall Migration Pattern



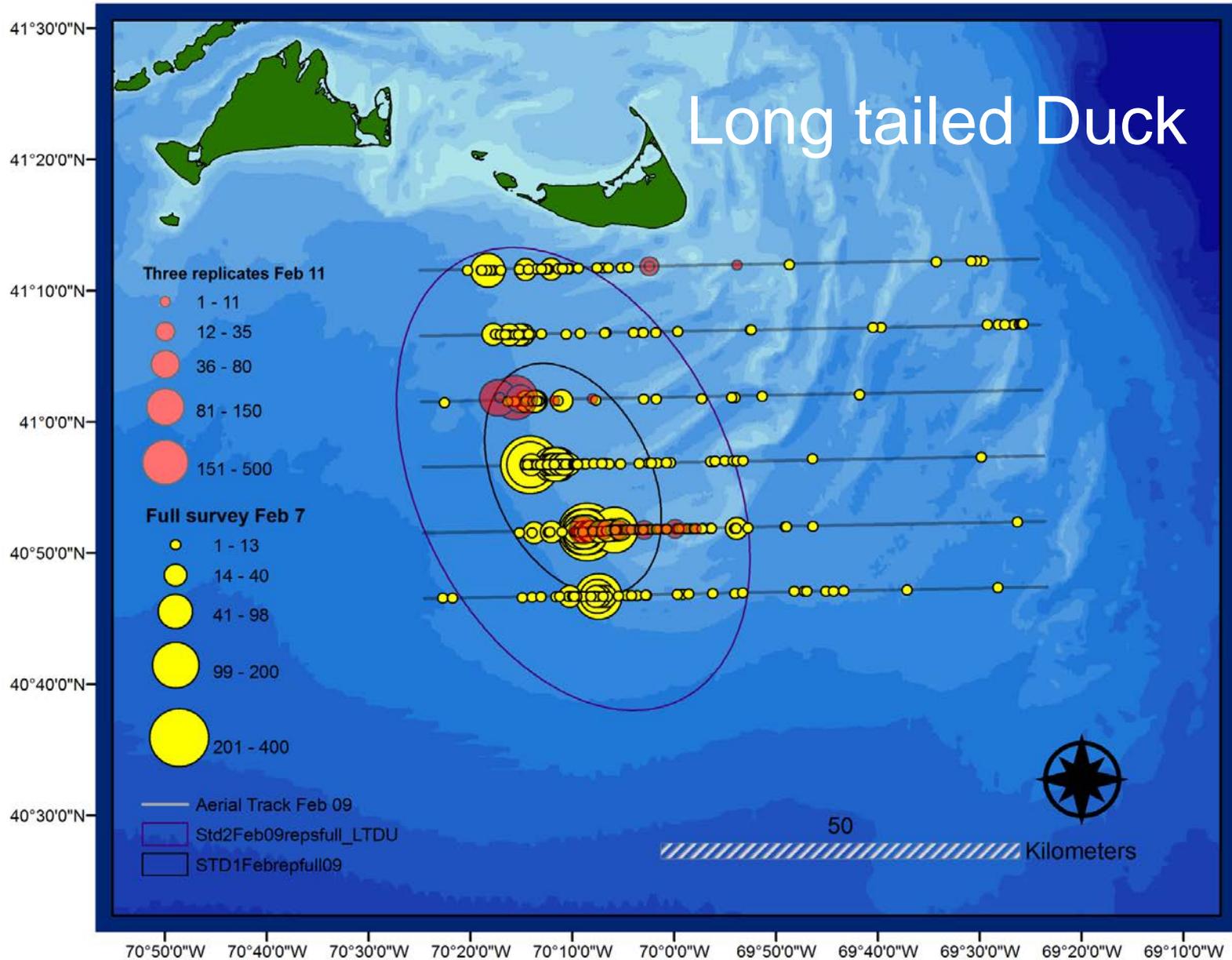
U.S. Fish & Wildlife Service

Maine Coastal Islands National Wildlife Refuge

Greater Shearwater migration



Providing Guidance to Partners



Providing Guidance to Partners

